



SIOFA | APSOI

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Accord relatif aux Pêches dans le Sud de l'Océan Indien

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Data limited fisheries biomass estimates: Trend analysis for SIOFA toothfish (Project TOT-2023-01)

European Union Delegation

France Overseas Territories Delegation

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Abstract	<p>This paper presents a framework designed to determine appropriate catch limits in data-limited fisheries, where a data collection for stock assessments is in place, in the interim of having a stock-assessment.</p> <p>It estimates biomass using two methods, the CPUE by seabed area analogy and the Chapman mark-recapture estimation. Biomass estimates have been used to recommend an update of the catch limits using a trend analysis decision rule adapted from CCAMLR. Results indicate that the trend analysis is a good candidate as an interim ad-hoc harvest control rule that could be used for managing data-limited stocks and adjust any future catch limits based on trends in biomass estimated from CPUE and tagging data.</p> <p>As a first step, this approach is applied to SIOFA data-limited toothfish fisheries in the Del Cano management unit (area code, DC MU), where conservation measures have been in force since 2020, and to the South Indian Ridge (area code, SIR) which was not yet agreed as a MU.</p> <p>Based on the trend analysis for SIOFA data limited toothfish fisheries, using a target harvest rate between 4 to 10% (within the bounds of a 20% increase or decrease in the previous catch limit or the mean catch over the last five years), derived catch limits advice for 2025 would be: 44t for DC MU and 78t for SIR.</p>

¹ Restricted documents may contain confidential information. Please do not distribute restricted documents in any form without the explicit permission of the SIOFA Secretariat and the data owner(s)/provider(s).

² Documents available only to members invited to closed sessions.

Recommendations

The delegations recommend that the SC (recommendations separated by theme):

Methodology:

- **Notes** that the code to conduct the trend analysis will be made available to the SIOFA Secretariat.
- **Recommends** that evaluation of the performance of the trend analysis with respect to the interim stock-specific reference points is undertaken.
- **Recommends** that evaluation of tagging programs is undertaken in toothfish management areas.
- **Recommends** estimating the toothfish removals from marine mammal predation in the toothfish management areas with fisheries targeting Patagonian toothfish (TOP), and these estimates be included in future assessments.

Toothfish data limited stocks in SIOFA subarea 3.b:

- **Recommends** establishing a management unit for the spatial area of SIR (SC8 Report Para 155).
- **Recommends** ensuring representative data collection in toothfish MUs.
- **Recommends** that the trend analysis be used for setting catch limit in toothfish data limited MU of DC and SIR.
- **Recommends** that the Secretariat update annually the trend analysis to review catch limits of TOP in DC MU and SIR.

All SIOFA data limited stocks:

- **Recommends** applying a similar framework based on CPUE-by-seabed area analogy, chapman mark-recapture estimator or other approach to estimate local biomass to all data limited stocks in the SIOFA area.